

Exemption No. 6056

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056**

In the matter of the petition of

Nasera Corporation

for an exemption from § 25.562
of the Federal Aviation Regulations

Regulatory Docket No. 28180

GRANT OF EXEMPTION

By letter dated March 28, 1995, Mr. Richard J. Kucera, President, Nasera Corporation, 4471 NW 36th Street, Suite 254, Miami, Florida 33166, petitioned for a temporary exemption from the requirements of § 25.562 of the Federal Aviation Regulations (FAR), for certain Lockheed Model 382G airplanes.

Sections of the FAR affected:

Section 25.562 requires that each seat, berth, safety belt, harness, and adjacent part of the airplane at each station designated as occupiable during takeoff and landing must be designed so that a person making proper use of those facilities will not suffer serious injury in an emergency landing as a result of prescribed inertia forces.

Related sections of the FAR:

Subpart O of part 21 prescribes procedural requirements for the issuance of Technical Standard Orders (TSOs), which are minimum performance standards for specified articles. A TSO authorization is an FAA design and production approval issued to the manufacturer of an article which has been found to meet specific TSO requirements.

ANM-95-025-E

The petitioner's supportive information is as follows:

"Pursuant to § 11.25 of the FARs, Nasera Corporation (Nasera) petitions the Federal Aviation Administration (FAA) for temporary exemption from the requirements of § 25.562. Nasera is an engineering firm applying for Supplemental Type Certification (STC) of Lockheed model 382G aircraft operated by Southern Air Transport (SAT) of Miami, Florida. The pending STC modifies the 382G aircraft, which is presently certificated as a cargo aircraft, to accommodate carriage of 18 passengers under SAT's part 121 operating certificate. The 18-passenger interior is designed for quick-change (QC) installation/removal by installing passenger seats on two removable cargo-type pallets. The requested exemption would authorize the use of all 18 passenger seats and the one flight attendant seat conforming to TSO-C39b, but not conforming to TSO-C127, for a period of 180 days after issuance of the STC.

"Introduction

"Nasera's customer, SAT, is presently modifying the first of six of their 382G airplanes to allow carriage of passengers and cargo simultaneously, for use under contract with the United States Air Force. The Air Force requires that the modified airplanes be certificated under civilian rules (part 25) and that they be operated under the rules applicable to scheduled commercial air carriers (part 121).

"Nasera submitted its application for STC to the FAA's Atlanta Aircraft Certification Office (ACO) on August 28, 1994, and has been working with that office since July of 1994 to assure that the design of the QC interior modification is in compliance with the applicable FAR. From the aforementioned date of application for STC until middle February of this year--some 5 1/2 months--the regulation from which exemption is sought (§ 25.562) was not considered to be applicable to the certification basis for the modified aircraft, neither by Nasera nor by the Atlanta ACO. (Because § 25.562 did not become effective until June of 1988, it was not expected that it would be made a requirement for this modification, since the 382G aircraft was type certificated in 1968.) Consequently, the operator's contractors did not make arrangements early in the project to procure the upgraded seats, nor did Nasera make arrangements for their proper certification. Although a vendor has been identified (Burns Aerospace) with previous experience supplying the required type of double and triple economy class seats meeting TSO-C127 (§ 25.562), additional certification testing would likely be required, due to unique seat leg spacing on the QC layout, and corresponding special head injury criteria (HIC) considerations. The general understanding throughout the industry is that testing and certification of seats per TSO-C127 commonly requires several months. It is therefore necessary for Nasera to petition the FAA for exemption from § 25.562 in order to allow its customer, SAT, to deliver an STC-certified product for use within the contract deadline of the U. S. Air Force."

"Schedule

"Southern Air Transport's eligibility for contracting with the Air Force to carry passengers will expire on April 17, 1995. If a certified airplane is not available by that time, then SAT will be forced to wait another year to re-establish eligibility. Nasera and Atlanta ACO personnel believe that it is reasonable to expect STC issuance by April 17, as long as Nasera is not required to install TSO-C127 seats. Because of this contract eligibility deadline, and because Nasera was not informed of the § 25.562 requirements for so long after submittal of application for the STC, it is requested that the requirement for submittal of petition for exemption "at least 120 days before the proposed effective date of the exemption" as stated in § 11.25(b)(1) be waived. It is furthermore requested that the publication and comment procedures of §§ 11.27(b) and 11.27(c) be waived, to expedite granting of the exemption. Nasera is aware of previous temporary exemptions of this type having been granted in the past--some without public comment owing to unavailability of hardware and immature technology. This exemption would not, therefore, be setting a precedent.

"Nasera has acted as expeditiously as possible since receiving notice of applicability of § 25.562 via letter from the Atlanta ACO on February 14, 1995. Requirement of publication and public comment would surely move the date for potential grant of exemption well past the aforementioned April 17 contract deadline.

"The seat manufacturer identified above has indicated the ability to deliver the required seats within 180 days. It is known that the structure of these seats have been certified for installation into new aircraft, with lateral leg spacing to fit the floor tracks in that aircraft (Airbus A340). In order to use the same seat design in the QC-configured 382G aircraft, the two passenger seating pallets for the first of six airplanes could be modified, using solid aluminum adapter plates, to accept the A340 leg spacings. Pallet designs for the five follow-on QC interiors would be revised to directly accommodate the A340 leg spacing. The seat track crown cross section and material used on revised and modified pallets would be the same as was used in the certification testing of the A340 seats, so that the only remaining variables for TSO-C127 certification would be (1) seat pitch and (2) head strike "targets." Since all seats in the QC 382G interior are directly in line forward-to-aft, the test data from the previous certification effort at 30" pitch will be transferable to the TSO for the 382G seats at that pitch spacing. The forward-most row is separated from a decorative forward partition which can be moved forward several inches, if required, to prevent head impact. Photometric traces of head trajectories--adjusted for fifth percentile to ninety-fifth percentile males--will be used to verify non-impact with the forward decorative partition.

"Safety

"If granted, this exemption will present no sacrifice in safety to the intended passengers, below the safety standards for seats they are presently traveling in. The QC-modified 382G aircraft

will be used for transport of military shipments and personnel who presently travel via one of three options: (1) commercial airlines; (2) military transport aircraft; or (3) aboard the jump seat in the 382G cockpit, none of which will offer a higher standard of seat safety until United Airlines places its Boeing 777 aircraft into revenue service later this year. (Although it is understood that some commercial carriers have begun retrofitting their fleets with "16g" seats, this still represents only a tiny fraction of the available passenger seats in the domestic and international airline fleets.)

"As part of the certification basis of the QC interior STC modification, Nasera has agreed to comply with all of the latest pertinent regulations in part 25, through Amendment 25-82, effective June 21, 1994. This will assure a level of safety for the modified 382G aircraft that exceeds a large majority of the domestic U.S. commercial airline fleet.

"Public Interest

"Benefit will accrue to the U.S. Air Force in the form of both reduced cost and increased logistical efficiency, by allowing the transportation of personnel and related materiel aboard the same vehicle.

The FAA finds, for good cause, that action on this petition should not be delayed by publication and comment procedures for the following reasons: (1) a grant of exemption would not set a precedent in that it is for a time extension from a requirement, and not permanent relief from a requirement, and therefore would not create a public safety issue; and (2) delay on acting on the petition would be disruptive and create a major economic burden for the petitioner and operator.

The FAA's analysis/summary is as follows:

Part 25 of the Federal Aviation Regulations (FAR) was amended by Amendment 25-64 (53 FR 17646, May 17, 1988) to include a new § 25.562 entitled "Emergency landing dynamic conditions." This section requires the passenger and crew seats in transport category airplanes to be designed and shown by tests to protect each occupant during an emergency landing. Compliance entails testing of such seats under dynamic conditions using anthropomorphic test dummies. In addition to showing the structural integrity of the seats and seat attachment structure, the tests must show that seat occupants would not be subjected to more than specified upper torso, pelvis, and lumbar loads. The tests must also show that occupants would not be subjected to more than a specified Head Injury Criterion (HIC). In addition to the criteria specified in § 25.562, guidance concerning acceptable means of compliance is contained in Advisory Circular (AC) 25.562-1. Seats that comply with these criteria are frequently referred to as "16g seats." Newly designed transport category airplanes, i.e., those for which the application for type certificate is made after June 16, 1988, are required to comply with § 25.562.

It is the intent of the FAA to enhance safety by encouraging manufacturers of modified products, as well as newly designed products, to comply with the latest airworthiness standards wherever and whenever feasible. This policy is based, in part, on the knowledge that the modified products, particularly those products with major changes, are likely to remain in service for several years to come. Because it has been shown that using seats that meet the standards of § 25.562 will save lives, all manufacturers and modifiers of other transport category airplanes are being very strongly encouraged to use those seats.

Nasera has accordingly accepted the merits of this argument, and has agreed to include the requirements of § 25.562 in the certification basis of the QC-modified Model 382G. As has been substantiated, however, Nasera was not fully aware of the FAA's position on this subject until considerably into the development of their modification. In view of Nasera's commendable regard for the safety of occupants utilizing their modified airplanes, and the aforementioned communication difficulty, the FAA has no wish to penalize Nasera in any respect by denying their petition for additional compliance time.

In consideration of the foregoing, I find that a grant of exemption is in the public interest, and will not significantly affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in §§ 313(a) and 601(c) of the Federal Aviation Act of 1958, delegated to me by the Administrator (14 CFR 11.53), the petition of Nasera Corporation for exemption from the requirements of § 25.562 of the FAR, on Lockheed Model 382G airplanes modified by installation of Nasera's QC interior, is granted through October 17, 1995. The airworthiness certificates issued for any U.S.-registered airplanes that have not been shown to comply with the requirements of § 25.562 by that date will also expire on that date, accordingly.

Issued in Renton, Washington, on April 11, 1995.

/s/ John J. Hickey, Acting Manager
Transport Airplane Directorate, ANM-100